

A communications system employs the use of both synchronous CDMA and FDMA to provide a variable bandwidth waveform with multiple bonded transmitters and receivers that are agile in both frequency and PN code to permit a variable bandwidth and variable rate multiple access system. In a first aspect the teachings provide the use of both CDMA and FDMA together to enable an improved concentration efficiency by making a larger pool of bandwidth available to each user. In a second aspect these teachings enable channel bonding across both code space and frequency space, thus making the system capable of operating within a variable (not necessarily contiguous) bandwidth and at a finely variable rate.